# Project 1: Problem Definition

This will be your group's major project for the quarter. Remain in the same group throughout all phases of this project.

Choose one of these:

A. Redesign the Computer Science Department web site (interactive)
B. Redesign the PRESENCE (MIT Press) Journal web site (interactive)
C. Build an on-line course matrix tool
D. Design a new interactive web site for your research group or academic track
E. Design a new interactive web site for a campus club or activity

You can think of this project as your group's proposal for your overall project this quarter.

- What activity will your system support?
- Who will use it?
- Under what criteria are we to judge it? -- be specific
- How will you approach the problem?

State your problem in one sentence.
Think beyond just data foraging. Are there any interesting activities that you can address?

Assigned:
Due:

# Project 2: Requirements Gathering

**Needs Analysis**
Produce a single phrase that states your goal(s) and supporting descriptions of assumptions and special terms.

GOAL:
>One sentence

FEATURES:
>List the features of your system. What does it do? What activities are you supporting?

**User Analysis**
Produce a description of the user or user group based on significant characteristics and limitations that might affect the design of the interface.

USER CHARACTERISTICS:
>What will this be used for?
>How often will it be used?

SKILLS:
>General computer skill level?
>Typing skills? Is this needed?
>Experience with web browsers?

CONCLUSIONS:

**Task Analysis**
Construct a hierarchical set of tasks to identify how users will use the system. We'll do only the first two levels.

Primary Task 1
>Subtask 1.A
>Subtask 1.B
>Subtask 1.C

Primary Task 2
>Subtask 2.A
>Subtask 2.B

**Functional Analysis**
Now map these tasks to function points that your system must provide. This might map almost directly but think about it. It might not.

**Task/Function Allocation**
What will the user do and what will the system do for the user?

Assigned:
Due:

# Project 3: Design

Complete a conceptual and visual design of your system based on the requirements specification.

Conceptual design.
    In a similar fashion to what you did for Project B, develop the conceptual model for your application. (See Hix, pg. 133).

Visual Design (Initial scenario design).
    Sketch the screens that are needed for your design. Based on the functionality outlined in the task analysis and the function points in the conceptual design, determine how this functionality will be accessed (via menus, buttons, dialogue boxes, etc.).

Early Analysis
    Show your sketches to two outside reviewers unfamiliar with your project. Walk them through a few tasks to get some initial feedback as to the efficacy of your design.

Turn in one design report for each group.
Turn in a set of pages containing the sketches of your entire interface.

Assigned:
Due:

# Project 4: Prototype

Complete a prototype implementation of your system based on the design you did in Project 3 plus any subsequent redesigns.

Prototype
     Possibly using a rapid prototyping tool (Symantec Cafe, Metrowerks CodeWarrior, a web page designer, etc.), build your system. You are not being evaluated on the elegance of your code, but on the usability and efficiency of your interface.

Assigned:
Due:

# Project 5: Usability Analysis

Complete a simple usability analysis of the prototype you built in Project 4.

TASKS:
   For your system, determine a set of tasks you will study. These should be very representative of what your system is supposed to be used for.

SUBJECTS:
   Select at least five people to perform the set of tasks.
   *No students from this class can take part in your study!*

DATA COLLECTION: This stage of analysis is more formal and contains both qualitative and quantitative elements. You will ask the same questions you did in the preliminary usability study but you will add to it here.
   Where did user expectations not meet system reaction?
   *Efficiency*
   Do users perform the tasks in an optimal method? If not, why?
            Do they feel that any tasks should have been easier to perform?
   How many interaction techniques (or attempts) does it take to do each task?
            Account for any differences.
   Where are user delays in your system? (points where the user spends time thinking about what to do next)
            What can you do to remove these? (or minimize them)
   *Errors*
   Do they make errors?
            Can you engineer these out of the system?
            If not, has your design adequately accounted for them?
                         easily recoverable?
                         informative messages?
   What errors were made?
   How many errors were made?
   *Learnability/Memorability*
   Was the system easy to learn?
            Will they require help? training?
   Does efficiency and/or error rate drop as the subject becomes more familiar with the system?
   *Satisfaction*
   Were users satisfied with your system?
   Would they like to see it on-line for real usage?
   What changes did they suggest to you?

Suggestion: Before you run your subjects, write up a set of questions like those above that you will ask all subjects. For each subject, allow the analysis to extend beyond this list (they will probably have things to say you could not have anticipated) but use the list as a baseline.

You will turn in a summary of your study describing what you did, the raw data you collected, and any comments on your analysis.

Assigned:
Due:

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# Project 6: Redesign

Based on the results of your usability study, make necessary alterations to your design.

Draw sketches of design changes you made based on the results of your study. Be specific!

Turn in one redesign document for each group.


Assigned:
Due:

# Project 7: Implementation and Field Test

Make necessary changes to your design based on your redesign document. At this point, we would normally do at least one more cycle of usability studies but for the sake of saving time, we'll go directly to the field test phase. During a field test, usage of your system is uncontrolled. So you have to make sure it is robust enough to stand up to whatever users may wish to use it for. It is here where you really see if your system is well designed.

Clean up your implementation as best as you can and get it ready for public usage.

We won't have time to gather information as we normally would from a field test but make sure there is a way for users of your system to contact you with comments, problems, and questions.


Assigned:
Due: